

Amendment to the Claims

Please amend claims 1 and 11, and add new claim 12 as shown in the following listing of claims. This listing of claims will replace all prior versions, and listings, of 5 claims in the application.

- 1 1. (currently amended) A method of testing analogue or radio frequency
2 circuitry for the presence of faults, the method comprising the steps of:
 - 3 a) applying a plurality (~~100~~) of different DC power supply voltages
4 to a circuit or component under test, at least one of said power supply voltages
5 being arranged to cause at least some of the elements of the circuit or component
6 under test to operate in a predetermined region of operation; and
7 b) measuring (~~102~~) the quiescent current of said circuit or
8 component as a result of application of said power supply voltages to generate
9 (~~104~~) a current signature representative of the operation of said circuit or
10 component;
11 the method being characterized in that said power supply voltages
12 at which said quiescent current measurements are taken comprise selected distinct
13 voltages; and by the step of:
14 c) comparing (~~106~~) said generated current signature with a
15 predetermined current signature representative of operation of a fault-free
16 component or circuit so as to determine (~~108~~) whether or not any faults are present
17 in the component or circuit under test.
- 1 2. (original) A method according to claim 1, including the further step of
2 measuring one or more selected nodal voltages, in addition to said quiescent
3 current, as a result of application of said selected power supply voltages.
- 1 3. (original) A method according to claim 2, wherein said one or more nodal
2 voltages are measured at one or more respective output nodes of said circuitry.

1 4. (previously presented) A method according to claim 1, including the step
2 of providing a single supply voltage means and ramping said supply voltage up to
3 attain each of said selected power supply voltages, prior to measurement of the
4 quiescent current.

1 5. (previously presented) A method according to claim 1, wherein the
2 selected power supply voltages are selected so as to cause at least some of the
3 elements of the circuitry under test to pass through several regions of operation.

1 6. (previously presented) A method according to claim 1, wherein a fault
2 dictionary database is provided, and the method includes the further step of
3 comparing a generated current signature with contents of such a database to
4 diagnose one or more faults present in the circuitry under test.

1 7. (previously presented) A method according to claim 1, wherein a
2 tolerance window is defined for the resultant quiescent current measurements for
3 at least one of the selected power supply voltages.

1 8. (original) A method according to claim 7, wherein a tolerance window is
2 defined for the resultant quiescent current measurements for all of the selected
3 power supply voltages.

1 9. (previously presented) A record carrier on which is stored a computer
2 program for enabling the method of claim 1 to be performed.

1 10. (previously presented) A method of testing analogue or radio frequency
2 circuitry, including the step of making available for downloading a computer
3 program for enabling the method of claim 1 to be performed.

1 11. (currently amended) Apparatus for testing analogue or radio frequency
2 circuitry for the presence of faults, the apparatus comprising: ~~comprising~~
3 a) means for applying a plurality of different DC power supply
4 voltages to a circuit or component under test, at least one of said power supply
5 voltages being arranged to cause at least some of the elements of the circuit or
6 component under test to operate in a predetermined region of operation; and
7 b) means for measuring the quiescent current of said circuit or
8 component as a result of application of said power supply voltages to generate a
9 current signature representative of the operation of said circuit or component;
10 the apparatus being characterized in that said power supply
11 voltages comprise selected distinct voltages; and by:
12 c) means for comparing said generated current signature with a
13 predetermined current signature representative of operation of a fault-free
14 component or circuit so as to determine whether or not any faults are present in
15 the component or circuit under test.

1 12. (new) A method according to claim 1, wherein the different DC power
2 supply voltages are selected to cause at least some of the elements of the circuit or
3 component under test to pass through subthreshold, linear and saturation operating
4 regions.